Understanding the Early Years

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Early Childhood Development in Saskatoon, Saskatchewan

KSI Research International Inc.
Applied Research Branch
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Executive Summary

Understanding the Early Years (UEY) is a national research initiative. It provides communities with information to enable them to make informed decisions about the best policies and most appropriate programs for families with young children. It seeks to provide information about the influence of community factors on children's early development and to improve the community's capacity to use these data in monitoring child development and creating effective community-based responses.

This report is one of thirteen community reports describing children's outcomes and explaining them in terms of three factors: family background, family processes, and community factors. Studies in one pilot community and five study communities were conducted in 2000-2001. This report presents results for Saskatoon, one of seven communities studied in 2001-2002. Children's outcomes were assessed in three major categories: physical health and well-being, cognitive skills, and behavioural measures. Each evaluation comprised several measures:

- Family background includes information on the parents' income, level of education, and occupational status.
- Family processes include positive parenting practices, engagement in learning activities, family functioning, and maternal mental health.
- Community factors include social support and social capital, neighbourhood quality and safety, use of recreational, cultural, and educational resources, and residential stability.

Data for these reports were derived from several sources:

- The National Longitudinal Survey of Children and Youth (NLSCY) Community Study is a national instrument used to gather data directly from parents and children concerning the health and well-being of Canada's children 5-6 years of age.
- The Early Development Instrument (EDI) is based on a teachers' checklist of their kindergarten students that assesses how prepared children are for learning at school.
- The NLSCY and EDI data collected from the UEY sites allows comparison across the seven UEY communities. Where possible, the outcomes of the children in this community were compared with averages for their province and for Canada as a whole. If data were not available at those levels, the outcomes of the children are compared across the seven UEY communities of Hampton, New Brunswick; Montreal, Quebec; Mississauga - Dixie-Bloor, Ontario; Niagara Falls, Ontario; South Eastman, Manitoba; Saskatoon, Saskatchewan; and Abbotsford, British Columbia.

Generally, the children of Saskatoon are fortunate: they live in high-quality, safe neighbourhoods with a high level of social support. Parents are engaged with their children and make use of community resources. These factors have undoubtedly contributed to Saskatoon's success in the development of its young children, even though there are several neighbourhoods of very low socioeconomic status. There is also room for improvement. Saskatoon has a high percentage of children with behaviour problems. This is of particular concern, as behaviour problems upon entry to school tend to persist throughout the schooling years and are a risk factor for low school achievement and disaffection from school. If children with behaviour problems tend to be concentrated in certain classrooms and schools in Saskatoon, then the risks associated with poor behavioural development are increased further.

Valuable lessons have been learned from the UEY initiative about the needs and strengths of communities with different economic, social, and physical characteristics, and about how they are each working to improve their young children's outcomes. This community-based research is important because it allows a community to understand how well its youngest citizens are developing and lends insight into which factors contribute to success and warrant further consideration.

Study Highlights

Approximately 34.9% of children in Saskatoon were living in low income families, 18.1% were Aboriginal, and 30.6% were headed by a single parent. Families of low socioeconomic status tend to be concentrated in certain areas of the city, particularly west of the South Saskatchewan River. Despite this residential segregation, many children in poor areas are faring quite well, while many children in relatively affluent areas had low scores on several of the outcomes measured.

Results based on the Early Development Instrument, a measure derived from reports by children's kindergarten teachers, indicated that children in Saskatoon fare especially well in social competence, and communication skills and general knowledge. Its scores for physical health and well-being, and emotional health and maturity, were close to Canadian norms. The only weak area was language and cognitive development.

Findings based on direct assessments of children's cognitive development and vocabulary indicated that the children in Saskatoon scored slightly below national norms in cognitive development and close to the norm for vocabulary.

The prevalence of children with behaviour problems was very high: about one-and-a-half to two times national norms.

The relationship of family background, family processes, and community factors from the NLSCY in relation to the EDI domain scores were studied for all seven 2001-02 UEY communities together.

- The parents' level of education, whether the parents were working outside the home, whether the child was living in a two-parent or single parent family, social support, and use of community resources were the most important variables related to the cognitive domain.
- Positive parenting[1] was by far the most important factor explaining the outcomes in the behavioural domain, followed by not having a father or a mother working outside the home, the mother's mental health, and community social support.
- Family income, mother's education, and whether the father was working outside the home were the most important variables influencing physical health and well-being.

While family background was particularly important in the cognitive domain, the role of positive parenting was an especially important predictor of behaviour problems.

In all seven 2001-02 UEY communities, use of educational, cultural and recreational resources is quite low, 3.4 on a 10.0 point scale. At 3.7 on this scale, Saskatoon's use of resources is higher than the average, but still low enough that there is room for marked improvement.

1 This "style" of parenting, called "authoritative" parenting, is characterized by parents monitoring their children's behaviour, being responsive to their needs, and encouraging independence with a democratic approach. It stands in contrast to "authoritarian" parenting, characterised by parents being highly controlling and somewhat harsh in their approach to discipline, and "permissive" parenting, characterised by parents being overly indulgent and setting few limits for behaviour.

Because it was low overall for the seven communities, use of resources was explored further by considering the availability of educational, cultural and recreational resources for the seven UEY communities. In Saskatoon, the availability of education resources was 80.7%, cultural resources was 71.4% and recreational resources was 56.6% compared with 69.2%, 50.0%, and 53.7%, for the combined NLSCY data of the seven UEY communities. Thus, Saskatoon is well served, but the use of existing resources is low.

For Saskatoon, the total score out of 100 for family and community indicators was 67.3, 0.1 points above the average of 67.2 for the seven 2001-02 UEY communities. Its strengths were strong social support, high levels of neighbourhood quality, and use of resources. It scored low on the indicators of positive parenting and maternal mental health.

Despite good overall development, children in Saskatoon would benefit from efforts to improve their language and cognitive development, and behavioural outcomes. Efforts might be directed towards better behavioural outcomes by improving parenting skills, decreasing levels of maternal depression, and providing interventions for children experiencing problems.

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1. Introduction

A. What this study is about

Understanding the Early Years (UEY) is an initiative that provides information to help strengthen the research capacity of communities to make informed decisions about the best policies and most appropriate programs to serve families with young children. It seeks to provide information about the influence of community factors on young children's development, and to enhance community capacity to use these data to monitor early childhood development and to create effective community-based supports.

There is increasing evidence to support the importance of investing in the early years of children's development. New research shows that these formative years are critical, and that the kind of nurturing and stimulation that children receive in their early years can have a major impact on the rest of their lives.

Evidence also suggests that neighbourhoods and communities where children grow and learn directly influence their development. They affect parents' ability to provide the best possible family environment, and the ability of schools to offer the best possible education.

Neighbourhoods, communities, provinces and regions across Canada differ in important ways. Therefore, gathering community-specific information about children and the places where they are raised can help the policy sector[2] deliver programs that are sensitive and responsive to local conditions. *Understanding the Early Years* can contribute to this process.

This report is one of thirteen community research reports. Studies in one pilot community and five study communities were conducted in 2000-2001, and another seven study communities were conducted in 2001-2002. This report presents results for Saskatoon, Saskatchewan one of the seven community studies conducted in 2001-2002. Each report describes children's outcomes and explains them in terms of three factors: family background, family processes, and community factors. Children's outcomes were assessed in three major categories: physical health and well-being, cognitive skills, and behavioural measures.

Data describing the outcomes of children ages 5 and 6, as well as the family and community environments in which they live, were collected from three sources: their parents, their teachers, and from the children themselves. The data for all thirteen community research reports were based on the Early Development Instrument (EDI) and the National Longitudinal Survey of Children and Youth (NLSCY) assessments. Samples were drawn in each of the communities from families with children ages 5 and 6, and the teachers, parents, and children were given both of the EDI and NLSCY assessments.

In order to understand the performance of the children in this community based on the EDI, the results are compared to a larger EDI sample of about 28,250 children, drawn from selected communities. Although this sample, referred to as EDI-16, is not truly national or representative, it provides a means of comparing children in this community with other 5-6 year old children. The number of children in the EDI-16 sample is different from that used in the EDI monitoring report.[3]

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2 Policy sector is broadly conceived to include families, the private and voluntary sectors, and governments at local, provincial and federal levels.

3 The EDI community monitoring report uses only EDI data. The NLSCY data are from a sample of all of the children who completed the EDI. Therefore, the numbers in the EDI report and the research report are not the same.

The results from the NLSCY assessments taken by the community's children are compared with the national means, developed from the national survey, which has a nationally representative sample.

The first aim of this report is to assess how children fare in cognitive and behavioural outcomes and in physical health and well-being. It considers children's developmental outcomes shortly after they begin kindergarten. Where possible, the report provides provincial- and national-level information with which local conditions can be compared.

The report's second aim is to discern how important certain family and community factors are in affecting children's development, as well as to provide some indication of what actions might further improve children's outcomes in this community.

The report sets out ten indicators upon which this community can act over the next few years. If the policy sector can devise means to improve the processes associated with these indicators, it is likely that children's outcomes during the formative years will improve, as will their chances of leading healthy and fulfilling lives.

B. How the study was conducted

The information contained in this document was collected and analyzed using a variety of methods.

Two major types of information about the children were collected. The first considers aspects of children's development at ages 5 and 6, which comprises five major domains:

- Physical health and well-being
- Social competence
- Emotional maturity
- Language and cognitive development
- Communication skills and general knowledge.

Information for this set of domains was collected by teachers, using a checklist called the Early Development Instrument (EDI), developed by Dr. Dan Offord and Dr. Magdalena Janus at the Canadian Centre for Studies of Children at Risk, McMaster University. Teachers of all kindergarten children attending public schools in Saskatoon were asked to complete the checklist about the behaviours and development of each child in their class. This information was used to determine how ready the community's children, as a whole, were for school.

The second type of developmental information was collected through a survey of parents, guardians, and the children themselves. The instruments used in the National Longitudinal Survey of Children and Youth Community Study were administered to children and their parents. This was done to acquire more detailed information about the experiences of children and families in Saskatoon, as well as, measures of children's outcomes regarding their cognitive skills, pro-social behaviour and other behavioural outcomes. In addition, information regarding childcare arrangements (e.g., whether children were cared for by parents, relatives, or non-relatives, either at home or outside the home) was collected.

A random sample of 425 kindergarten children from Saskatoon was selected to participate in this survey. Statistics Canada interviewers collected detailed information from and about these children using instruments from the NLSCY Community Study. The major instruments measuring children's outcomes include:

- Vocabulary Skills (Peabody Picture Vocabulary Test, Revised)
- Developmental Level (Who Am I?)
- Number Knowledge (Number Knowledge Assessment)
- Behaviour Outcomes.

The interviewers also collected information about several family and community factors that can help explain the patterns of child development in the community.

Children completed assessments that asked them to draw, print symbols (e.g., letters and words), show their understanding of quantity and number sequence, and match pictures to words that they heard. Their families provided information about their social and economic backgrounds; their children's activities and involvement in the community; their health; and their social, emotional, and behavioural development.

Because the NLSCY questionnaire is also used across the country as a national survey, the outcomes for children in this community can be compared with national data.

Inset 1: **Socio-economic status**
The measure of socio-economic status (SES) for the map in Figure 1.1 was derived from the 1996 Canadian Census, based on data describing enumeration areas (EAs), which represents a geographic unit of about 400 families. The measure of SES is a composite score derived from census measures of family income, level of education, and the occupational status of adults living within each enumeration area. The composite scores were standardized, such that the average score for all EAs in Canada was zero, and the standard deviation was one. With this standardization, only about one in six EAs scored below -1, (low SES shown in dark red), and about one in six scored above +1, (high SES shown in dark green). For a discussion of the SES measure derived from the Census, see Willms, J. D. (2002), Socioeconomic gradients for childhood vulnerability. In J. D. Willms (Ed.), *Vulnerable Children: Findings from Canada's Longitudinal Study of Children and Youth*. Edmonton, AB: University of Alberta Press.

C. Why the study is of interest

Understanding the Early Years combines information about children with information about their families and the communities in which they live. This in turn, provides an understanding of the relationship between children's outcomes and the environments in which they are raised. This is important for Canada's parents and communities who want to help their children develop well. Second, it helps the individuals, institutions, and communities who work with children to understand these processes at the levels where action is often most effective, the neighbourhood and community.

This report highlights some of the key findings from the information that was collected from teachers, parents, and their children. It examines the overall development of children in kindergarten (through the Early Development Instrument) and provides a more detailed look at the outcomes of these children (through the NLSCY Community Study). It suggests some of the unique strengths from which Saskatoon can work, and some challenges to overcome in continuing to build a collective commitment to ensure the health, well-being, and positive development of its young children.

D. Socio-economic status in study area

Socio-economic status (SES) is an important variable in social research because it affects a person's chances for education, income, occupation, marriage, health, friends, and even life expectancy.[4] This report describes children's outcomes and how they are affected by family socio-economic status, family processes, and community resources. Thus, it is helpful to have an understanding of the socio-economic backgrounds of the families in this community, as well as of how these are distributed geographically across the study area.

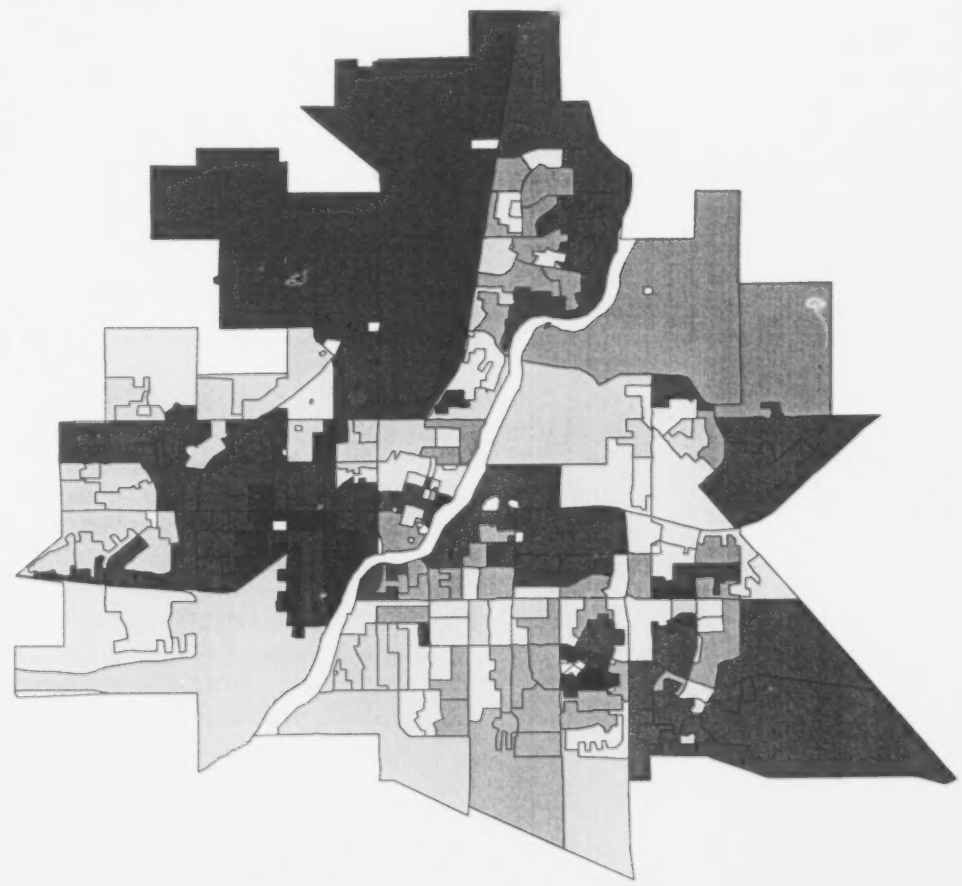
Socio-economic status is usually quantified as a composite measure comprising income, level of education, and occupational status. Accordingly, the measure of SES used here combines the income, level of education, and occupational status of the children's parents. Other family factors, such as family structure (e.g., single- or two-parent family), or whether the mother was a teenager when the child was born, are not dimensions of SES (although they are usually correlated with SES). Additional aspects of family and community structure will be presented in Section III.

Figure 1.1 shows the distribution of socio-economic status in this community. This map clearly shows considerable residential segregation, with concentrations of and low SES families on the south-west side of the city, and high SES families on the eastern side of the city, and along the South Saskatchewan River. The areas of low SES families are in general contiguous, as are the areas of high SES. There are a few enclaves of low SES families in the east side of the city, which are surrounded by high SES areas. The reverse is not true.

Despite the relatively low socio-economic status of some sections of Saskatoon, the children of this community scored near the national averages for many outcomes measured with the EDI and the NLSCY instruments. Moreover, the analyses in the next section show that the spatial distribution of outcomes does not match SES patterns (see Figures 2.3 to 2.7). This indicates that there are many children in poor areas who are faring quite well, and children in high SES areas with rather low outcomes.

4 Miller, Delbert C. 1991. *Handbook of Research Design and Social Measurement.* Sage Publications Inc. Newbury Park, CA. p. 327.

Figure 1.1 – Socio-economic status of Saskatoon (see inset I)



II. The outcomes for children of Saskatoon

A. How the outcomes were measured

This section provides more information about the specific measures of children's outcomes. A child's cognitive skills, behaviour, and physical health and well-being outcomes were measured in two ways, using the Early Development Instrument (EDI) and the National Longitudinal Study of Children and Youth (NLSCY) Community Study.

Five domains of the EDI (teacher report)

1. Physical health and well-being: children's motor skills, energy levels, fatigue, and clumsiness.

2. Social competence: self-confidence, tolerance, and children's ability to get along with other children, to accept responsibility for their own actions, to work independently.

3. Emotional health and maturity: children's general emotional health and maturity. It also identifies minor problems with aggression, restlessness, distractibility, or in-attentiveness, as well as excessive, regular sadness.

4. Language and cognitive development: mastery of the basics of reading and writing, interest in books, and numerical skills (e.g., recognising numbers and counting).

5. Communication skills and general knowledge: children's general knowledge, their ability to articulate clearly, and their ability to understand and communicate in English or French.

Cognitive skills (from the NLSCY - direct assessments of the child)

Vocabulary Skills (Peabody Picture Vocabulary Test, Revised - PPVT-R): assesses a child's receptive or hearing vocabulary. The children hear a word said aloud and are asked to point to one of four pictures that they believe corresponds to the word.

Developmental Level (Who Am I?): is based on copying and writing tasks, which are designed to test children's ability to conceptualise and to reconstruct a geometrical shape and to use symbolic representations, as illustrated by their understanding and use of conventional symbols such as numbers, letters, and words. Children are asked to copy five shapes (such as a circle or a diamond) and to write their names, numbers, letters, words, and a sentence. Because the tasks are not dependent on language, Who Am I? can be used to assess children whose knowledge of English or French is limited.

Number Knowledge Assessment: is designed to test the child's understanding of numbers. Children who do not have this understanding, or who are working in a language different from their mother tongue, often have difficulty mastering basic arithmetic and demonstrating number sense. The Number Knowledge Assessment evaluates children's understanding of quantity (more vs. less), their ability to count objects, their understanding of number sequence, and their ability to do simple arithmetic.

Behaviour outcomes (from NLSCY community study - parent report)

Measuring a child's behaviour is based on a scale administered to the person most knowledgeable about the child, which is

usually the mother.[5] The measurements comprise several questions, each with the same format. For example, the mother is asked how often her child cannot sit still, is restless, or is hyperactive. She answers with one of three possible responses – "never or not true"; "sometimes or somewhat true"; and "often or very true." The scale included the following elements:

Positive social behaviour: children who exhibit higher levels of positive social behaviour are more likely to try to help and comfort others. They may offer to help pick up objects that another child has dropped or offer to help a child who is having trouble with a difficult task. They might also invite their peers to join in a game.

Indirect aggression: this element identifies children who, when mad at someone, try to get others to dislike that person; who become friends with another for revenge; who say bad things behind the other's back; who say to others, "Let's not be with him/her"; or who tell secrets to a third person.

Hyperactivity: hyperactive children cannot sit still; are restless and are easily distracted; have trouble sticking to any activity; fidget; cannot concentrate, cannot pay attention for long; are impulsive; have difficulty waiting their turn in games or groups; or cannot settle to do anything for more than a few moments.

Emotional disorder/anxiety: this element identifies children who seem to be unhappy, sad, or depressed; are too fearful or anxious; are worried; cry a lot; tend to be rather solitary; appear miserable, unhappy, tearful, or distressed; are not as happy as other children; are nervous, high strung, or tense; or have trouble enjoying themselves.

Physical aggression and conduct disorder: these children get into many fights. When another child accidentally hurts them (by bumping into them, for example), they assume that the other child meant to do it, and then react with anger and fighting. Also included are children who kick, bite, or hit other children; who physically attack people; and who threaten people, are cruel, or bully others.

Inset 2 - **Early Development Instrument**
The Early Development Instrument contained more than 70 questions, and asked teachers the following types of questions about each child in the class.

- Would you say that this child follows instructions, accepts responsibility, and works independently?
- How often is the child too tired to do school work?
- Is the child well co-ordinated?
- Would you say that this child is upset when left by a caregiver, has temper tantrums, appears worried, or cries a lot?

Teachers were asked to comment on the child's use of language, his or her interest in books, and his or her abilities related to reading and writing. They were also asked about children's communication skills and general knowledge.

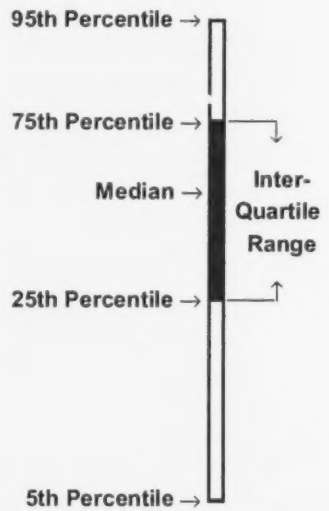
5 Statistics Canada trained personnel conducted the parent interviews by telephone only in English or French for the NLSCY. Parents without telephones or speaking other languages were not interviewed.

B. What we learned from teachers: results of the Early Development Instrument

The children of Saskatoon scored well overall on the five domains, compared with children in the EDI-16 sample (see Table 2.1),[6] with the largest differences being for Social Competence at 0.8 points above the EDI-16 average, and Communication Skills and General Knowledge at 0.4 points above the EDI-16 average. The scores for Language and Cognitive Development were 0.5 points below the EDI-16 average, which appears to be the greatest area of concern. The average scores for Physical Health and Well-being and Emotional Health and Maturity did not differ significantly from the EDI-16 average.

Figure 2.1 displays box plots describing the distribution of EDI scores for Saskatoon compared with the EDI-16 sample. The box plots show the median and percentiles for the distribution of EDI scores for each group (see Inset 3). The median represents the point at which 50% of the cases fall below and 50% of the cases fall above the median. Percentiles refer to the percentages of cases with values falling above and below the number. Ideally, a community would want to have a high median score, with relatively short blocks above and below the median. The results indicate that Saskatoon's median scores for the EDI domains are comparable to those of the EDI-16 sample. The exceptions are Social Competence and Communication Skills and General Knowledge, which indicate that the children in this community had higher scores than those in the EDI-16 sample. The range of scores is indicated by the length of the boxes.[7] The inter-quartile range (see Inset 3) of children in Saskatoon is similar to that of the EDI-16 sample. The exception is Language and Cognitive Development, where there are more children in Saskatoon with very low scores compared to the EDI-16. These results thus confirm those in Table 2.1, and suggest further that the low average score in Language and Cognitive Development is attributable mainly to an inordinate number of children with poor skills in this domain.

Inset 3 – The percentile plots display the distribution of the EDI scores for each group as follows:



6 The EDI sample size, N=419, included valid data only. To be included in the EDI sample size for Saskatoon children needed scores on at least 3 out of the 5 EDI domains. This explains why the EDI sample size (N=419) is different from the NLSCY sample size (N=425) for Saskatoon.

7 The longer the boxes, the greater range of variability in the EDI domain scores. For example, the physical health and well-being domain has short boxes which indicates that scores were very similar to one another. In contrast, the language and cognitive development domain has long boxes which indicates that scores varied considerably, ranging from very low to very high scores.

Table 2.1 – Mean scores on the Early Development Instrument for the Saskatoon UEY community and the comparison sample.

	Saskatoon Community (N=419)		Canadian Sample (N=28,250)	
	Mean	SD	Mean	SD
Physical Health and Well-being	8.5	1.6	8.6	1.1
Social Knowledge and Competence	**8.3**	1.9	7.5	1.5
Emotional Health and Maturity	7.8	1.9	7.9	1.5
Language and Cognitive Development	**7.6**	2.2	8.1	1.9
Communication Skills and General Knowledge	**7.6**	2.3	7.2	2.1

Note: Figures in blue text differ significantly (p<0 .05) from the Canadian sample mean.

Figure 2.1 – Box plots comparing the distribution of EDI scores for Saskatoon.

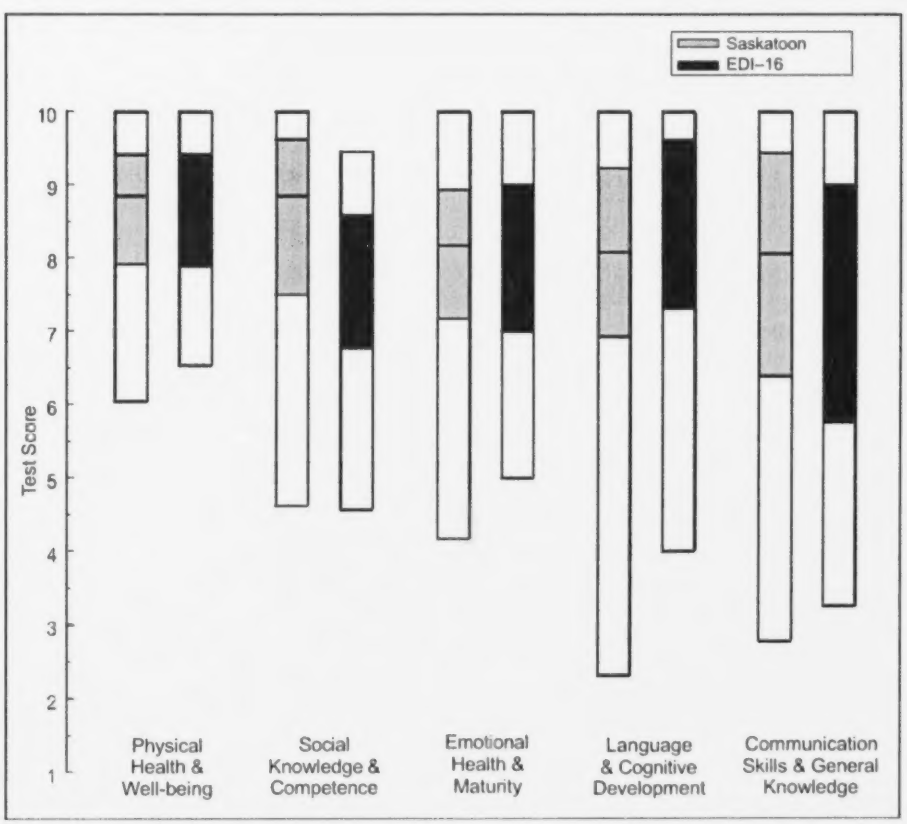
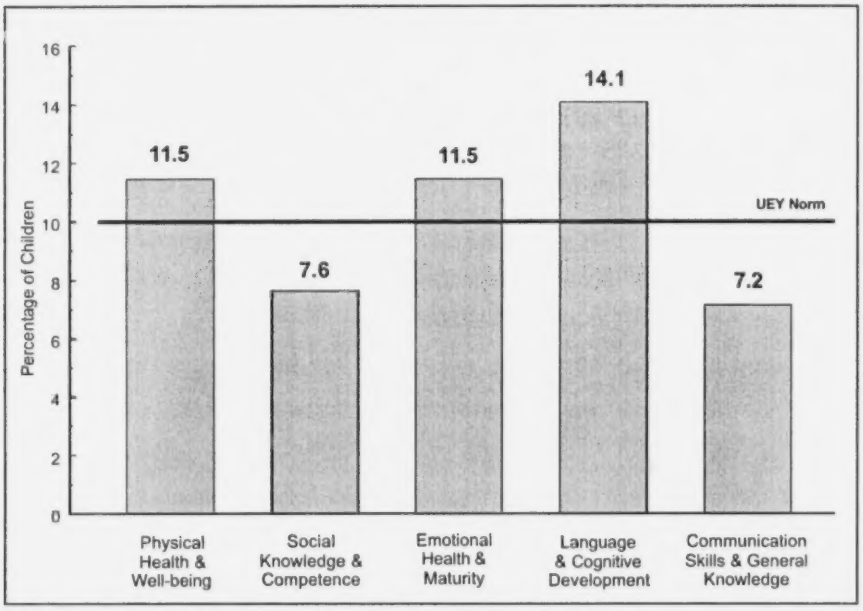


Figure 2.2 – Percentage of children with low scores on the Early Development Instrument in Saskatoon.



Note: Significant differences ($p<.05$) are indicated with red text.

The EDI-16 was also used to establish a "low score" threshold for each EDI domain. The low-score threshold scores were set to the tenth percentile, which means that 10% of all children scored below this score for each domain. Thus, if a community had typical results, we would expect 10% of its children to score below the same threshold scores for each domain. In Saskatoon, the percentage of children with very low scores on the EDI was close to 10% (ranging from 7.2% to 11.5%) on all tests except Language and Cognitive Development. In this domain, 14.1% of the children were considered by their teachers to have low scores. These analyses also support those presented in Table 2.1 and Figure 2.1, which suggest that there are a large number of children in Saskatoon with relatively low scores in Language and Cognitive Development.

The data collected as part of the *Understanding the Early Years* study included information about where each child resided. Therefore, an analysis was conducted that would give some indication of how children's scores on the EDI were distributed geographically. To achieve this, we determined the average score within each enumeration area, for each domain of the EDI. We then "smoothed" the average scores for each enumeration area.

Figures 2.3 through 2.7 display the geographic distribution of the EDI scores for each of the domains. For each map, the yellow and orange areas represent scores that are just below (orange) or just above (yellow) the median score of the full EDI-16 sample. Scores that are somewhat below the EDI-16 median are indicated in light red, and very

low scores (which are comparable to the bottom 17% of the population) are shown in dark red. Similarly, relatively high scores are represented in light green, while very high scores (which are comparable to the top 17% of the population) are shown in dark green. Although the distributions vary by domain, most of the EAs scoring above the median, shown as yellow to green areas, are in the southern area of the city, or in the northern area, close to the South Saskatchewan River. The central and western areas of the city tend to have average scores below the median, coloured orange to dark red.

Inset 4 - **Smoothing data**
This is a statistical technique that involves estimating the mean score for a particular EA together with the scores for all of the EAs that are geographically contiguous (that is, those that immediately surround it). Smoothing the EDI data in this way removes some of the random fluctuation due to measurement and sampling error, thereby displaying estimates of the results we would expect if all kindergarten children in the community had participated in the EDI. Smoothing also ensures that the confidentiality of individuals, or small groups of individuals, is not compromised. For a discussion of these techniques, see Fotheringham, A. S., Charlton, M., & Brunsdon, C. (1997). Measuring spatial variations in relationships with geographically weighted regression. In M. M. Fischer & A. Getis (Eds.), *Recent developments in spatial analysis.* Heidelberg: Springer-Verlag.

Figure 2.3 – The geographic distribution of EDI scores for physical health and well-being

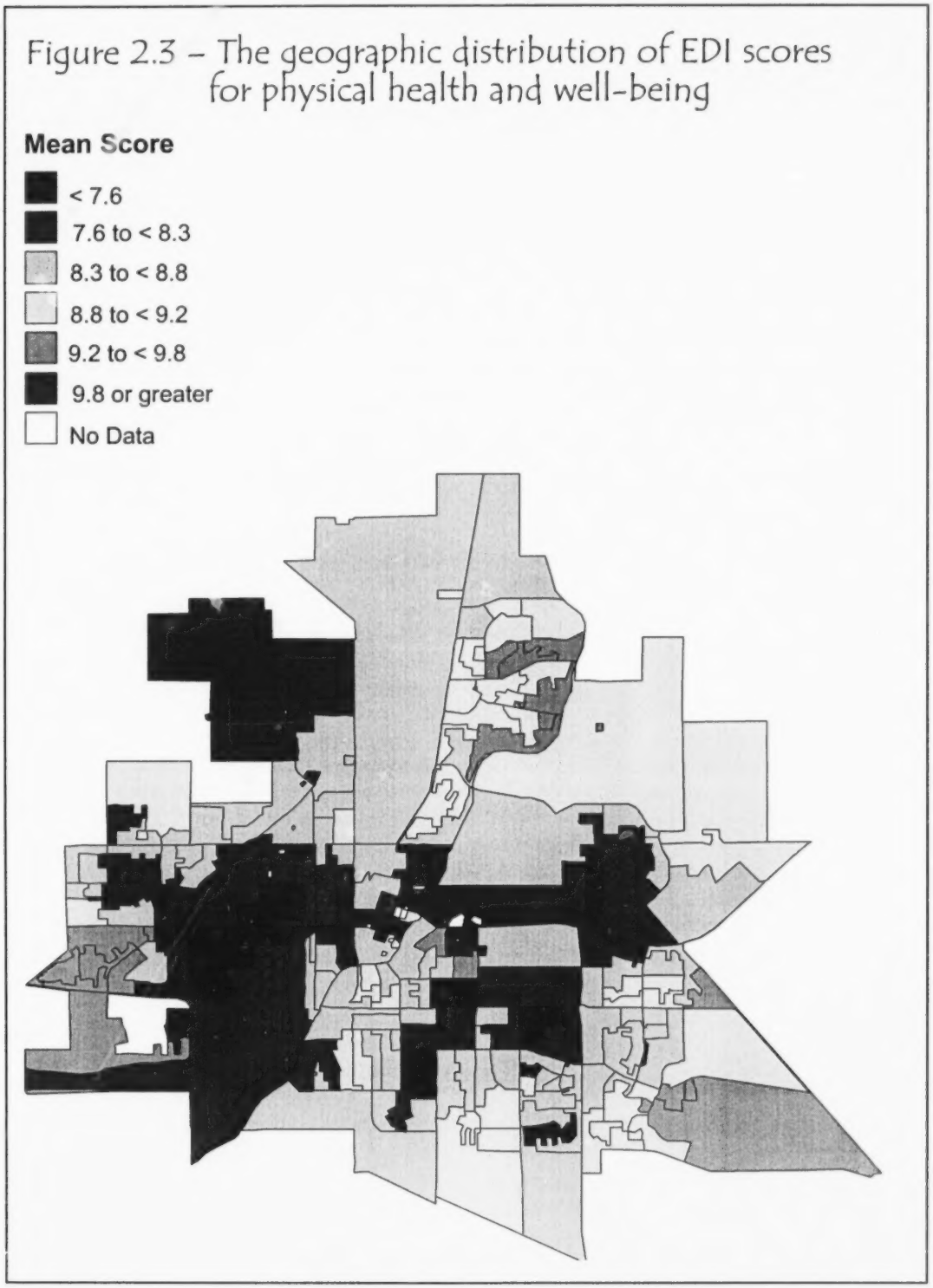


Figure 2.4 – The geographic distribution of EDI scores for social competence

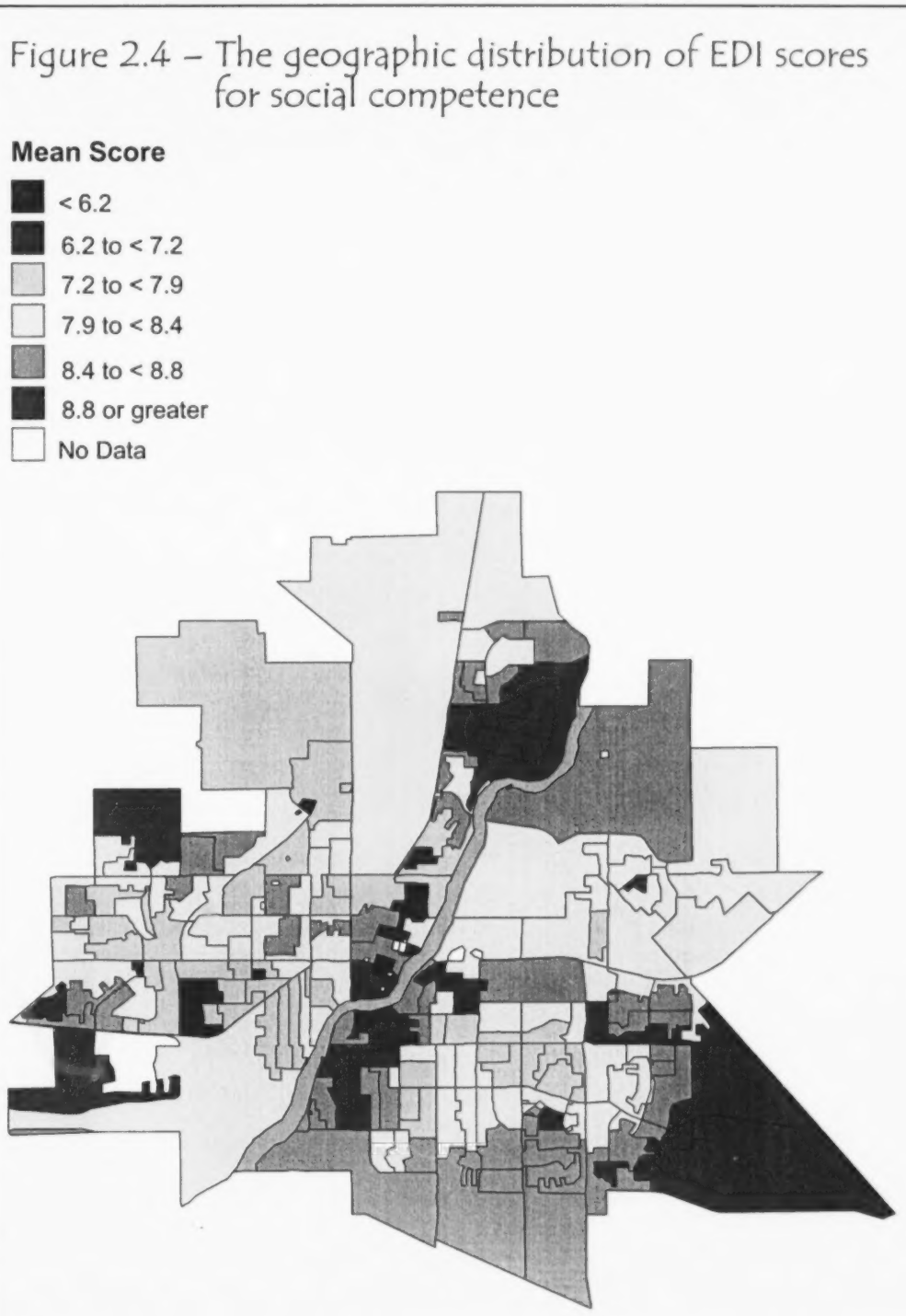


Figure 2.5 – The geographic distribution of EDI scores for emotional health and maturity

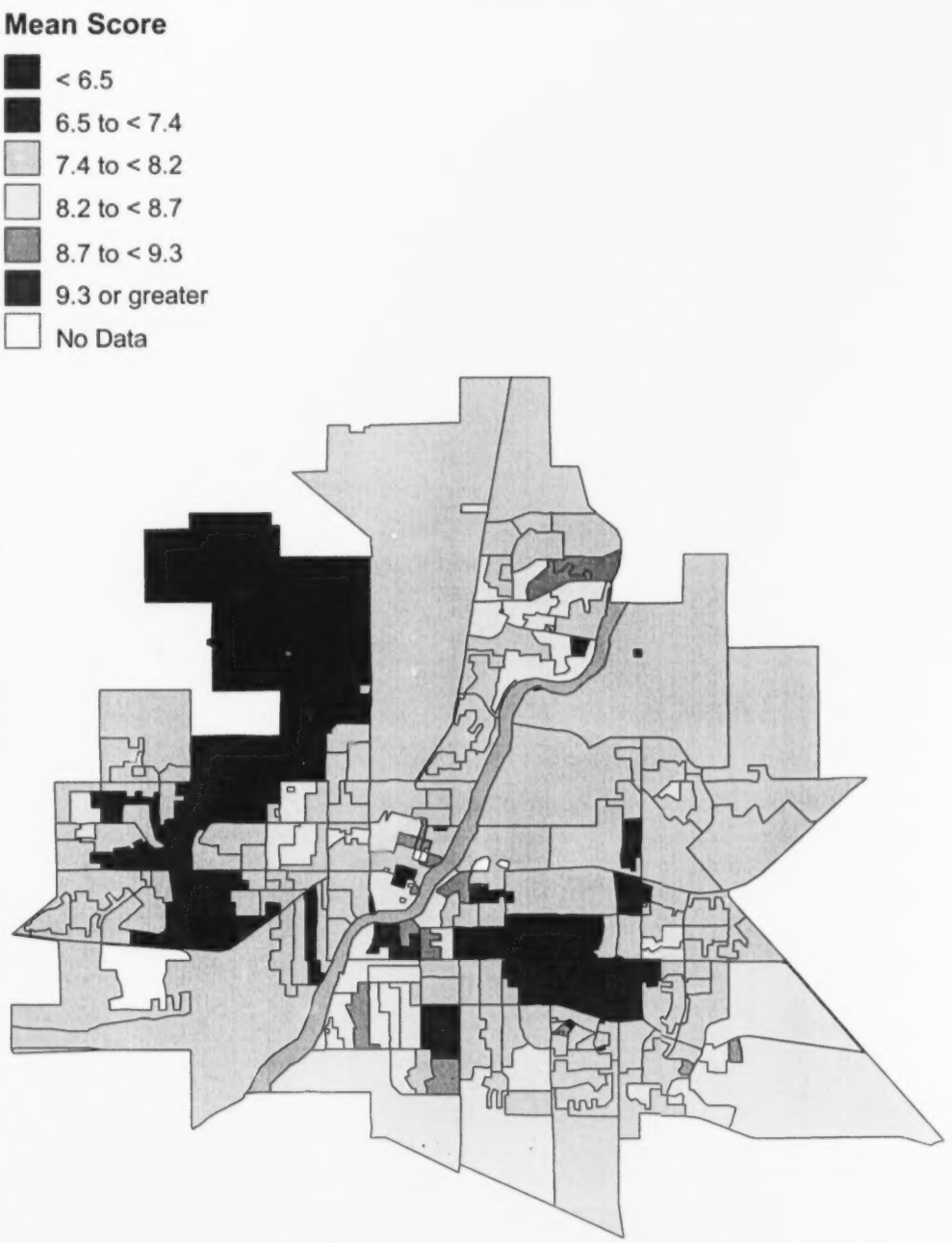


Figure 2.6 – The geographic distribution of EDI scores for language and cognitive development

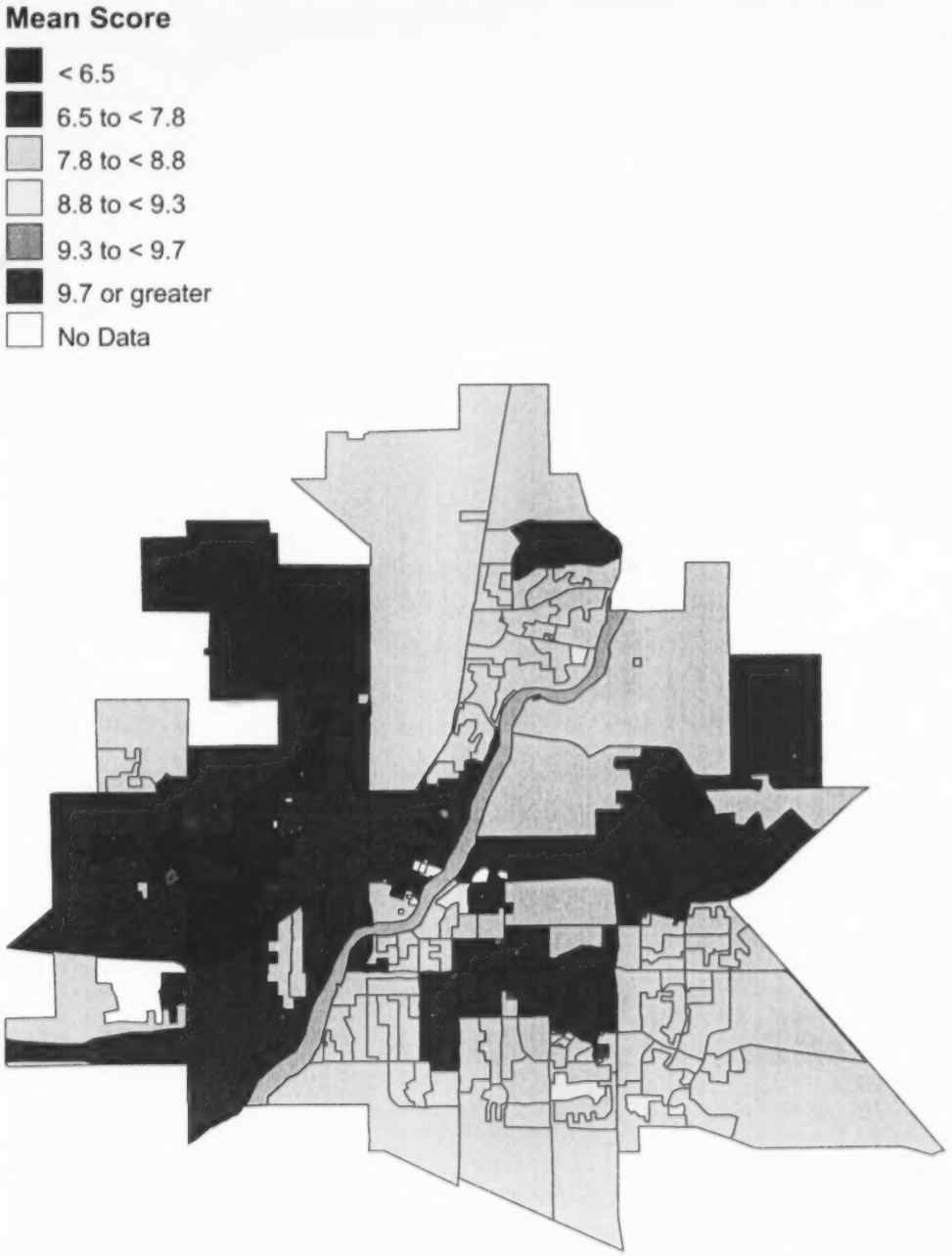
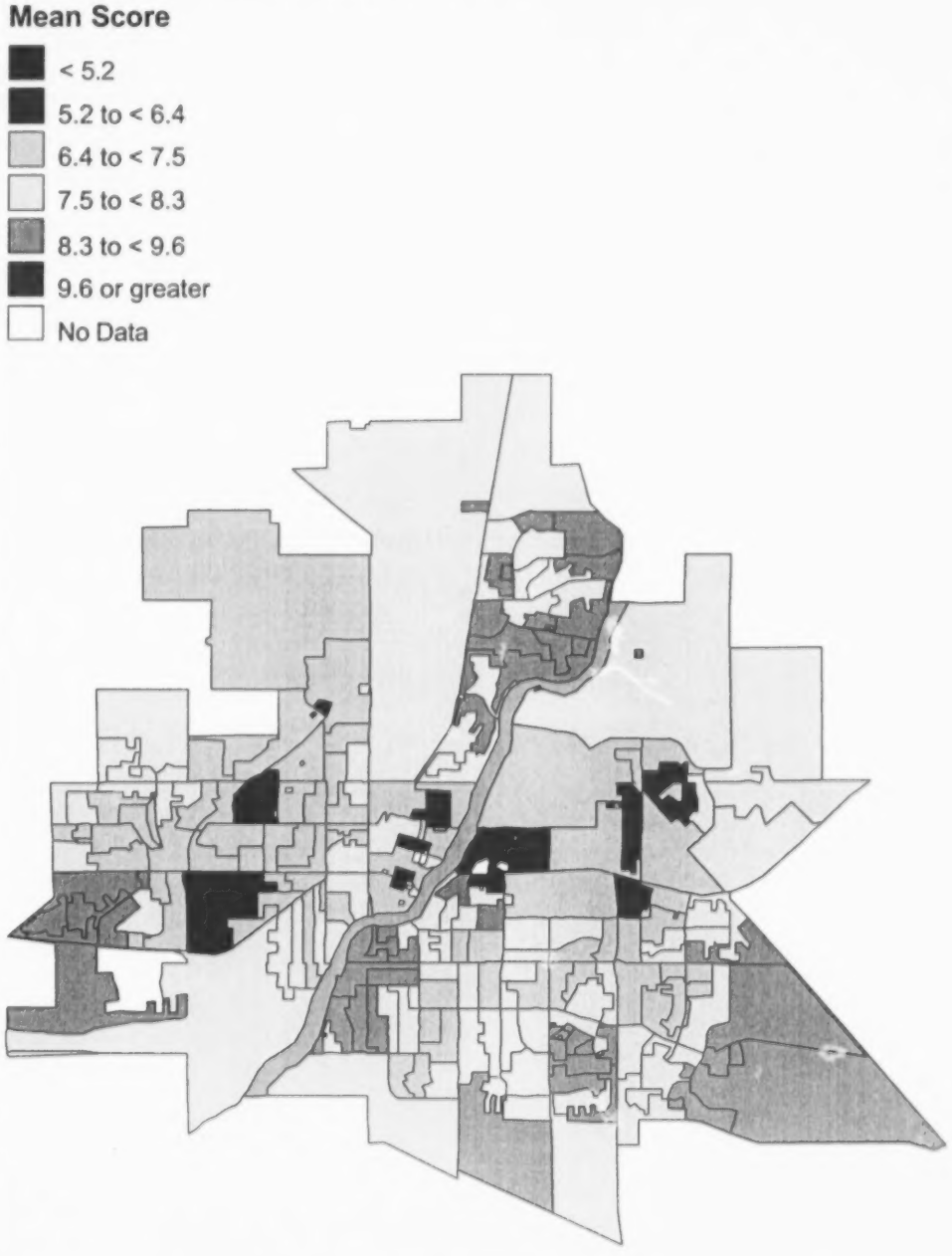


Figure 2.7 – The geographic distribution of EDI scores for communication skills and general knowledge



The map in Figure 2.3 shows that the average scores of many EAs were at or close to the EDI-16 median score (8.8) on Physical Health and Well-being, including a number of EAs with high socio-economic status. However, there were two areas where there was a concentration of low scores, one in the south-west of the city, and another in the centre of the east side.

Figure 2.4 shows that scores in Social Competence tend to hover around the EDI-16 median (7.9), or are well above the EDI median. The EAs with relatively high average scores tend to be in the higher SES areas of the east side of the city.

Figure 2.5 shows that scores for Emotional Health and Maturity for most EAs are close to the EDI-16 median (8.2). There are two areas where there is a concentration of EAs with low average scores, and only a few EAs with average scores well above the median.

Figure 2.6 shows that most EAs in the west side of Saskatoon exhibit very low scores on Language and Cognitive Development, whereas on the east side the scores tend to be slightly below the EDI median (8.8) or well below the median. There were no EAs with average scores that were well above the EDI median.

Figure 2.7 indicates that the average scores of most EAs were just above or just below the EDI median (7.5) on the Communication Skills and General Knowledge test. However, there are a few small clusters of EAs in the central areas with relatively low scores, and several pockets in the south and central-north attaining relatively high scores for this domain.

Overall, the maps show no consistent pattern for the EAs regarding SES and the five EDI domains in Saskatoon. There is a group of EAs on the southeastern outskirts of the community, and also in the north end immediately west of the river, that scored above average on four of the five EDI domains. In addition, the south central EAs are of interest, as they attained fairly low EDI scores despite high SES. Thus, the maps indicate that socio-economic background is not a definitive predictor of EDI outcomes, and that other factors that influence children's development should be considered. These outcomes may be more fully explained when additional family and community factors are taken into consideration.

C. What we learned from parents, guardians, and the children: NLSCY community study results

In this section, we discuss the results of the National Longitudinal Survey of Children and Youth Community Study, which measures children's cognitive skills, positive social behaviour, and behaviour problems.

Table 2.2 displays the means and standard deviations of scores on the Developmental Assessment (Who Am I?), on the Positive Behaviour Scale, and on the Receptive Language (PPVT-R) Test for Saskatoon. Figure 2.8 displays their distributions.

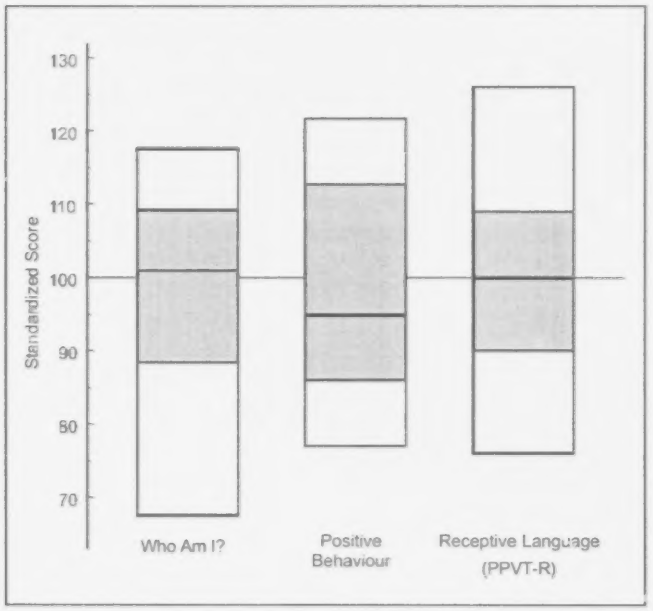
Inset 5 - For the Receptive Language Test, national norms were available, and the scores are scaled such that the national mean is 100, and the standard deviation (a measure of the spread of scores) is 15. National norms were not available for the Developmental Assessment (Who Am I?), or the Positive Behaviour Scale, but to maintain some degree of comparability, they were scaled to have a mean of 100 and a standard deviation of 15 for the entire sample of children who participated in the seven studies of the 2001-02 UEY project (see Table 2.2).

Table 2.2 – Mean scores on the NLSCY standardized instruments for the Saskatoon UEY community.

	Mean	Standard Deviation
Developmental Assessment (Who Am I?) (N = 339)	**97.5**	15.0
Positive Behaviour Scale (N = 417)	99.0	14.4
Receptive Language (PPVT-R) (N = 380)	99.9	14.9

Note: Figures in blue are significantly different from the standardized mean of 100.

Figure 2.8 – Box plots comparing the distribution of scores on the Who Am I?, Positive Behaviour Scale, and the PPVT-R.



The average score for Saskatoon on the Developmental Assessment (Who Am I?) is 97.5, which is significantly below the 2001-02 UEY average of 100 (see Table 2.2). However, the median score is slightly above 100 (see Figure 2.8). On the other two measures, the average score is 99.0, which is not significantly different from 100 (Table 2.2). On all three measures the standard deviation is close to 15.0, indicating that the spread of scores is also similar to those in the 2001-02 UEY sample or the NLSCY sample.

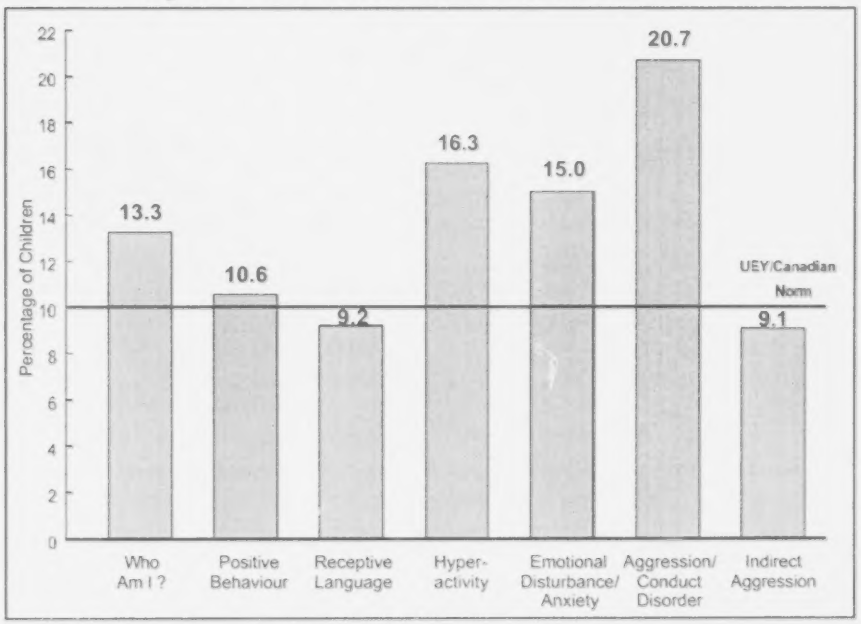
Figure 2.9 shows the prevalence of children with low scores on the Developmental Assessment (Who Am I?), the Positive Behaviour Scale, and the Receptive Language Test. It also shows the percentage of children deemed to have a behaviour problem, based on four measures of

behaviour (hyperactivity, emotional disturbance/anxiety, aggression/conduct disorder, and indirect aggression).

For each measure, a score at the 10th percentile of the 2001-02 UEY sample (for the Developmental Assessment and the Positive Behaviour Scale) or the nationally representative NLSCY sample (for the PPVT-R) was used as the threshold to define a "low score". Similarly, children with scores above the 90th percentile for the NLSCY sample on the behavioural measures were considered to have a behaviour problem. For each measure the prevalence of children in Saskatoon with low scores on the three developmental assessments, and the prevalence of behaviour problems, was calculated. This allows one to compare whether the prevalence of children in Saskatoon with significant problems in these areas is above or below the national norm of 10%.

The results indicate that the prevalence of children in Saskatoon with behaviour problems (hyperactivity, emotional disturbance/anxiety, and aggression/conduct disorder) was significantly above the national threshold, which was fixed at 10%. The prevalence of low-scoring children on the Developmental Assessment (Who Am I?) was also above 10%, but the difference was not statistically significant. The prevalence of children with low scores on the Positive Behaviour scale and the PPVT-R was close to 10%, as was the prevalence of children

Figure 2.9 – Percentage of children with low scores on the cognitive and behavioural measures (Saskatoon).



Note. Significant differences ($p<.05$) are indicated with red text.

displaying indirect aggression.[8] Overall, this analysis suggests that there is a high prevalence of children in Saskatoon with behaviour problems, compared with other parts of Canada.

The study also included a direct measure of a child's understanding of the system of whole numbers. Scores were classified according to developmental levels:

- Have not reached level 1
- Reached level 1 (usually attained by 4-year-olds)
- Reached level 2 (usually attained by 6-year-olds)
- Reached level 3 (usually attained by 8-year-olds)

For all of the children who did the assessment across the seven UEY sites, only 1.1% had failed to reach level 1. The majority of children (42.8%) were at level 1, or had made the transition to level 2 (54.2%). Only 1.9% of the UEY children had reached level 3. These results are as expected given that the UEY children were 5 and 6 years old.

In Saskatoon, 96.8% of the children sampled had either reached level 1 or had made the transition to level 2. This is nearly identical to the 2001-02 UEY prevalence of 97.0%. Only 1.1% of children in Saskatoon had failed to reach level 1.

Overall, the analyses in this section indicate that Saskatoon has some marked strengths and weaknesses in early childhood outcomes. Its strengths lie in the areas of children's social competence, general knowledge and communication skills. On measures of these skills teachers rated children slightly above national norms. Its weaknesses are in the areas of language and cognitive development, and behaviour. Teachers rated children below norms on the measure of language and cognitive development, which pertains to children's mastery of the basics of reading and writing, interest in books, and numerical skills. The majority of the children with very low scores in this domain were in the west side of the city. An encouraging result, however, is that the children sampled in this study scored very close to the national norms on the Receptive Language Test. This test is administered directly to the child using standardized methods, and can be compared with scores of other children in the country. The parents' ratings of children's behaviour indicated that compared with national norms there are about one-and-a-half to two times as many children with behaviour problems, including hyperactivity and inattention, emotional disorder and anxiety, and aggression and conduct disorder. Some of these results are likely attributable to family backgrounds and to various family and community factors. This is explored in the next two sections.

[8] The relatively low prevalence of children scoring low on Positive Behaviour seems inconsistent with the relatively high prevalence of behaviour problems. However, many parents gave their children high ratings to items pertaining to helping or comforting other children, even though they considered their children to exhibit behaviour problems.

III. How family background affects children's preparedness for a good start in life

In this section, information about the relationship between family background and children's outcomes is presented, and the family background of the children in Saskatoon is described. The relationship between family background and children's outcomes is not straightforward. An important goal of *Understanding the Early Years* is to distinguish the effects of family background, and those associated with family processes and community factors on children's outcomes. All three sets of contributing factors were measured. First, information on seven characteristics of family background are presented. In an earlier study of children's development, based on the national sample of children who participated in the first cycle of the NLSCY, these family background characteristics were significantly related to a range of children's developmental outcomes.

The values, calculated for the seven family background characteristics, are:

- Family income (in $10,000 units): considered to be low if less than $25,000.
- Mother's level of education: considered to be low if the mother did not complete high school.
- Father's level of education: considered to be low if the father did not complete high school.
- Mother's employment status: considered not working outside the home if the mother worked fewer than 25 weeks during the past year.
- Father's employment status: considered not working outside the home if the father worked fewer than 25 weeks during the past year.
- Single-parent family: only one parent or guardian living at home.
- Number of brothers and sisters: the number of siblings living at home.

Figures 3.1 and 3.2 show the relative levels of income, education, employment, and single-parenthood for families in the community, as well as provincial, and national levels for 1996/97. About 34.8% of families in Saskatoon were considered low income, compared with about 24.2% in Saskatchewan and 22% in Canada. These figures include single-parent families. The threshold for "low income" of $25,000 was used instead of the Statistics Canada low-income cut-off (i.e., LICO which adjusts for family size), as the former provides a means of assessing the absolute effects of income alongside the other measures used in the regression analyses.

About 86% of the children's mothers and fathers had completed high school. Compared with provincial averages (90.6%), mothers in Saskatoon had relatively low levels of education (85.7%), although this percentage is comparable to the national average. For fathers, the percentage of 86% is above the provincial and national figures (80.6% and 83.5% respectively).

Almost 31% of families were headed by a single parent, much more than the provincial average of 18.2% and almost double the national average of 16.6%.

The prevalence of parents in Saskatoon who were not working outside the home was higher than provincial and national averages for both mothers and fathers. About 60% of mothers were working outside the home, compared with about 67% provincially and 64% nationally.

Similarly, only 90% of men were working outside the home, compared with 95% provincially and 91% nationally.

The most striking demographic differences associated with Saskatoon families with young children are the high percentages of low-income and single-parent families. Over one-third of Saskatoon families had incomes below $25,000. Also, only about 70% of the children in Saskatoon were in two-parent families, while provincial and national figures are above 80%. Also, Saskatoon has a higher percentage of families of Aboriginal origin (18.1%), than either Saskatchewan (12.8%) or Canada overall (4.4%).

The map describing the socioeconomic status of Saskatoon families (Figure 1.1) indicated more affluent families are located on the east side of the city and along the South Saskatchewan River. The maps describing EDI outcomes (Figures 2.3 to 2.7) only weakly reflected these disparities in family background. Therefore, socio-economic and demographic factors alone do not explain why some children are better prepared in their cognitive and behavioural skills when they enter school.

A. The effects of family background factors on children's development

The analysis focussed on the factors contributing to whether or not a child had significantly low scores in one of the three developmental domains, these being the cognitive domain, the behavioural domain, and physical health and well-being. Children with very low scores are *at risk* of not achieving their full potential during the schooling years.

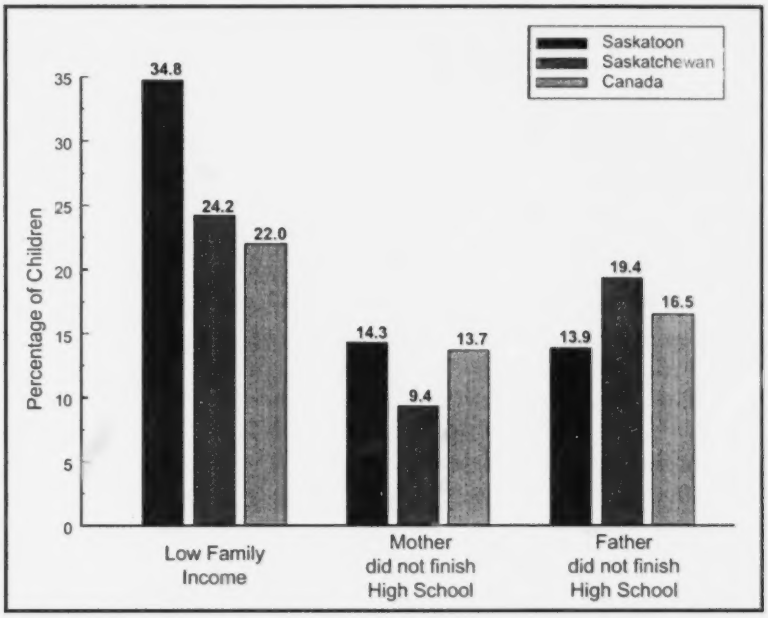
A child was considered to be at risk in the cognitive domain if he or she had a low score (i.e., below the 10% threshold) on the Receptive Vocabulary Test, the Developmental Assessment (Who Am I ?), or on the two cognitive domains of the Early Development Instrument.

Similarly, a child was considered at risk in the behavioural domain if he or she had a low score on the Positive Behaviour scale or on either of the two domains of the EDI pertaining to behaviour, or had any one of the four behaviour problems.

A child was considered at risk in the physical health domain if he or she scored below the low-score threshold on the Physical Health and Well-being domain of the EDI.

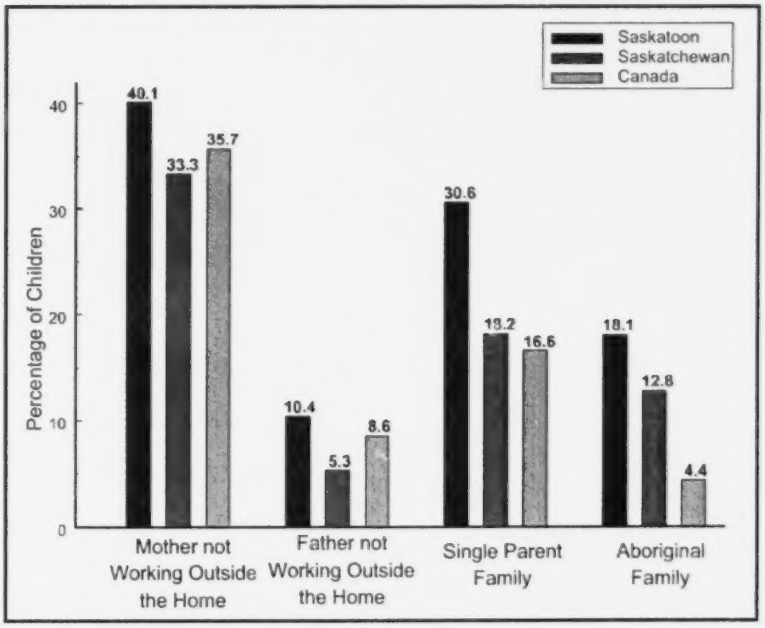
The analysis below focuses on positive outcomes, that is, it asks whether children will have a "good start in life". Children who are not vulnerable in any of the three domains are likely to have a better chance of achieving their full potential during the schooling years. Therefore, for each of the family background factors, the odds-ratio associated with whether a child was *not* at risk in these three domains was estimated (see Table 3.1) using the sample of children from all seven of the 2001-02 UEY communities. This, the results indicated in Table 3.1 apply to all 2001-02 communities, and are not specific to Saskatoon.

Figure 3.1 – Family income and parents' education.



Source: NLSCY for Saskatoon and national NLSCY (cycle 3, 1996-97).

Figure 3.2 – Parents' employment, marital status and aboriginal background.



Source: NLSCY for Saskatoon and national NLSCY (cycle 3, 1996-97).

Table 3.1 – Relationship between children's outcomes and family background.

	Children's Outcomes		
Odds Ratios	Cognitive	Behavioural	Physical Health & Well-being
Family Income ($10,000 units)	**1.07**	1.02	**1.13**
Mother's Education (years)	**1.11**	1.01	**1.08**
Father's Education (years)	**1.06**	1.01	1.04
Mother Not Working Outside the Home	**0.71**	0.89	0.82
Father Not Working Outside the Home	**0.64**	0.87	1.00
Single-Parent Family	**0.74**	**0.64**	0.78
Number of Brothers and Sisters	0.93	0.94	0.94

Source: Figures in blue text are statistically significant at p<.10. Results are based on the relationship of NLSCY family background variables with three outcomes for the 7 UEY communities.

Inset 6 - *Odds-ratios*

Odds-ratios denote the ratio of the odds of an event occurring after a one-unit change in the independent variable, compared with what it had been previously, if all other independent variables in the model are held constant.

For example, suppose the outcome variable of interest was whether a child repeated Grade 1. If the odds ratio for mother's education were .95, it would indicate that the odds of a child repeating a grade decreases as his or her mother's level of education increases. Specifically, with an increase of one year of the mother's education (e.g., 11 to 12, or 12 to 13, etc.), the odds of a child repeating a grade decreases by 5%. When an odds-ratio is greater than 1.0, it indicates that the odds of experiencing the outcome (e.g., repeating Grade 1) are greater with increasing levels of the factor being considered.

The results indicate that family income and the educational level of the mother are important protective factors for cognitive development. For example, the odds of being not at risk in the cognitive domain for a child living in a family with an income of $40,000 is about 7% greater than a child who had similar background characteristics but had a family income of $30,000. Similarly, each additional year of education of a child's mother increases the odds of not being at risk in the cognitive domain by about 11%.

In contrast, children whose parents were not working outside the home were more likely to be at risk in the cognitive domain, as were children living in single-parent families. The effects of these factors were considerable: each was associated with an increase in the odds of being at risk by about 30%.

The effects of family background for the behavioural domain were consistent with the effects for cognitive development, but they were generally weaker and not statistically significant. The exception was living in a single-parent family. Children from single-parent families were on average about 36% more likely to be at risk.

These effects of family income and mother's education were similar for children's physical health and well-being: a $10,000 increase in family income was associated with a 13% decrease in the odds of being at risk, and each additional year of mother's education was associated with an 8% decrease in the odds of being at risk. The other family background effects were not statistically significant.

These findings pertain to the relationships among developmental outcomes and family background for all families and children who participated in the seven UEY 2001-02 communities. It is important to note that not all children in low income or single-parent families have poor developmental outcomes. Some children from low-income or single-parent families have average or above-average scores on the outcome measures used in the study. Similarly, there are some children from high-income families, and families with two parents, who did not fare well on the developmental measures. Thus, the relationships observed only indicate that a child is *more likely* to experience difficulties in these developmental domains if he or she is from a poor family or a single parent family.

Given these relationships between children's outcomes in these domains and family income and maternal education, and the relatively high prevalence of families with low income or low levels of education in this particular community, the relatively strong performance of the children on some outcomes is not surprising. These results also indicate that the prevalence of children with behaviour problems is higher among single-parent families. Saskatoon has an especially high percentage of single parent families, which may account to some extent for the relatively high prevalence of children with behaviour problems. However, it is likely that other aspects of family and community life have also influenced children's outcomes. These factors are examined in the next section.

IV. What families and communities in Saskatoon can do to improve children's outcomes

Many studies of childhood outcomes have been based on investment theory, an economic theory that supposes that children receive an endowment from their parents. This includes biological attributes and a cultural endowment determined by their parents' norms, values, and preferences; their income and wealth; and their access to resources. Parents invest time and money in their children, primarily through expenditures on education and health care.[9]

Other theories suggest that childhood outcomes result from family and parenting practices. Children are less likely to have behaviour problems or poor cognitive development if their parents are supportive, responsive, and affectionate. Also, parents who are depressed or severely stressed are more likely to be tense and irritable with their children, and become less engaged in activities that contribute to their emotional and intellectual development. Marital relations become strained, and the overall ability of the family to function as a cohesive unit becomes compromised. These pressures also affect children's development.

Recent research on vulnerable children, based on data from the first cycle of the National Longitudinal Survey of Children and Youth,[10] considered the influence of both family processes and community factors on childhood outcomes. It found that the most important family processes included the parents' "style" of parenting, maternal depression, the cohesiveness or adaptability of the family, and the extent to which children are regularly engaged with learning activities. Child care also plays a critical role. Many children have better outcomes if they have quality daycare, especially those from families of low socio-economic status.[11]

Parents' ability to provide a supportive environment can be either helped or hindered by the neighbourhood and wider community.[12] The quality and safety of the neighbourhood is important, but social factors also play a role. Therefore, we are also interested in the degree of social support available to parents, and the extent to which parents have access to information and support through a strong network of friends and colleagues - factors embodied in the term "social capital." Social support and high levels of social capital are easier to build in a community when the population is not transient; thus, we also expect that child development may be affected by the extent to which the population is stable.

Finally, children's development is more likely to flourish if families have access to educational, cultural and recreational resources. These are important not only because they contribute directly to children's development, but also because they foster social support and increase social capital within the community.

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9 Becker, G. S. (1981). *A treatise on the family.* Cambridge, MA: Harvard University Press.

10 Willms, J. D. (2002). *Vulnerable Children: Findings from Canada's Longitudinal Study of Children and Youth.* Edmonton, AB: University of Alberta Press.

11 Kohen, D.; Hertzman, C.; & Willms, J. D. (2002). The importance of quality child care. In J. D. Willms (Ed.),). *Vulnerable Children: Findings from Canada's Longitudinal Study of Children and Youth.* Edmonton, AB: University of Alberta Press.

12 Brooks-Gunn, J., Duncan, G. J., Aber, J. L. (Editors) (1997). *Neighbourhood Poverty: Context and Consequences for Children.* New York: Russell Sage Foundation.

As was shown in Section II of this report, the children in Saskatoon scored as well as, or better than, children in the EDI-16 sample on four of the five EDI measures, and their scores approached national standards of performance on the NLSCY outcomes measures.

This is consistent with what one might expect, despite the range of socio-economic conditions in which they are living, since relatively few children are living in poorly educated families. However, many of the children living in more affluent EAs in central Saskatoon scored lower than one might expect, particularly in the behavioural domains. Factors other than those associated with their immediate socio-economic status may also be at play.

The strategy was to combine a large number of family and community variables into ten indicators that are essential for successful child development. These indicators had to meet two criteria:

- There had to be evidence that the indicators were related to children's developmental outcomes, either from previous literature or through analyses of the UEY and NLSCY data.
- They had to be amenable to change through the efforts and actions of families and communities, through the support of community and volunteer agencies, and through social policy at the local, provincial and national levels.

In this section, the ten indicators are described; the results of the analyses with the UEY data are presented, which give some indication of the relative importance of these factors; and the scores on these indicators for the Saskatoon community are shown.

A. Ten indicators of family and community success

Each of the indicators is presented from 0 to 10, with 10 being the highest positive score.[13]

1) Positive parenting

This indicator was based on research that has shown that children have better developmental outcomes when their parents monitor their behaviour, are responsive to their needs, and encourage independence with a democratic approach.

This "style" of parenting, called "authoritative" parenting, stands in contrast to "authoritarian" parenting, characterised by parents being highly controlling and somewhat harsh in their approach to discipline, and "permissive" parenting, characterised by parents being overly-indulgent and setting few limits for behaviour.[14]

The scale includes items assessing the extent of positive interactions - how often the parents praise the child, how often they talk and play with them, and how often they laugh together. It includes items pertaining to whether parents are consistent and rational in their approach.

For example, parents were asked about situations when their child was misbehaving: were they likely to raise their voice, scold or yell at their child, calmly discuss the problem, or discuss alternate ways of behaving? Did they often have to punish their child repeatedly for the same behaviour? Did their punishment depend on the mood they were in?

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13 This was achieved by rescaling the values for each of the Likert responses (e.g. strongly disagree, disagree, agree, strongly agree) from 0, 1, 2, 3 to 0, -3..33, 6.67, 10.

14 Baumrind, D. (1991). The influence of parenting style on adolescent competence and substance abuse. *Journal of Early Adolescence, II(1), 56-95.*

2) Parental engagement

This indicator measures the extent to which parents are engaged with their child in learning activities. It includes information on whether and how often parents tell stories to their children, teach them letters and numbers, teach them how to read, and encourage them to use numbers in their day-to-day activities. It also measures whether and how frequently children look at books and magazines, discuss them with their families and friends, and write or pretend to write with markers or pencils.[15]

3) Family functioning

The concept of family functioning refers mainly to the cohesiveness and adaptability of the family. It concerns how well the family functions as a unit, more so than the relationships between spouses or between parents and their children. A number of studies have shown that family functioning is related to children's developmental outcomes, especially children's behaviour.

In this study, it is assessed in the NLSCY with twelve items pertaining to a family's ability to communicate, make decisions and solve problems as a group, discuss feelings and concerns, get along together, and feel accepted for who they are.

4) Maternal mental health

The well-being of parents affects their parenting style and ability to respond to and engage their children in various learning activities.[16] Mothers' well-being has a stronger effect on children's outcomes than fathers' well-being.

This indicator was based on twelve items in the NLSCY that are commonly used to measure depression. For example, it includes questions about whether the person regularly experiences feelings of depression and loneliness, crying spells, low energy levels, an inability to concentrate and sleep, and a sense of being disliked by others. The scores were coded such that high scores indicate positive mental health; that is, the absence of depressed feelings.

5) Social support

The level of social support available to parents affects their well-being, and indirectly affects their ability to function as parents and as role models within their family and community.

This indicator measures the level of support available to the respondent, and describes how much support that person receives from a community of friends and family members.

To determine this, parents were asked whether they could get help in various situations, including emergencies; whether they were able to confide in and seek advice from others; whether they felt close to another person; and whether they felt they were a member of a group of people whose attitudes and beliefs they share.

6) Social capital

A separate but related indicator, social capital is a measure of the level of support available collectively to groups within a community. Thus, it comprises information about the ability of neighbours to work together to solve problems, help each other, watch out for one another's children, and provide children with role models outside their immediate families.

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15 McCain, M.N., & Mustard, J.F. (1999). Reversing the Real Brain Drain: Early Years Study Final Report.Publications Ontario.

16 Brooks-Gunn, J., Duncan, G.J., & Britto, P.R. (1999). Are Socioeconomic Gradients for Children Similar to Those for Adults? Achievement and Health of Children in the United States. In D.P. Keating's & C. Hertzman's (Eds.) *Developmental Health and the Wealth of Nations. The Guilford Press. New York.*

7) Neighbourhood quality

This indicator gauges the parents' perception of their neighbourhood as a place to raise children. It measures features such as cleanliness, safety, quality of schools and nursery schools, adequacy of facilities for children (such as pools and playgrounds), health facilities, and the level of involvement of residents. It also asks people to rate their present neighbourhood in comparison with the one they had lived in previously.

8) Neighbourhood safety

This indicator assesses the level of the parents' concern for children's safety in their neighbourhood. For example, parents were asked about the safety of parks and other play-spaces, crime rates, problems with older children in the neighbourhood, and whether they worried about children playing outside during the day.

9) Use of resources

This indicator measures the use of recreational facilities, including parks, trails, play-spaces, skating rinks, pools, camping areas, skiing facilities, amusement parks, and community centres; educational services, such as libraries, science centres, family resource centres, and drop-in programs; and cultural resources, such as art museums, plays, musical performances, sports events, and movies.

10) Residential stability

This factor was derived from a factor analysis of four variables measured as part of the 1996 Canadian census that assessed the degree of transience of the local population. These included the proportion of people who had moved in the past five years or the past year, as well as the percentages of single parents and elderly people in the neighbourhood. It was scaled in positive terms, such that a high score indicates greater stability. The average score for all enumeration areas in Canada is 5 on the 10-point scale.

B. The relationship between neighbourhood factors and children's outcomes

In Section III, a statistical technique called logistic regression was used to estimate the relationships between family background factors and whether a child had "a good start in life". Operationally, this meant that a child was not at risk of achieving his or her full potential because of problems in one of the three developmental domains.

In this section, that analysis is extended to include the ten family and neighbourhood factors described previously. This is a fairly conservative test of the effects of these factors, as the analysis is essentially asking, "What are the effects of these factors, after taking account of children's family backgrounds?"

As in Section III, the results are presented as odds-ratios (see the Inset in Section III). For the ten scales describing family processes and neighbourhood factors, these provide an estimate of the effect associated with a one point increase on the respective scale. The results, which are based on the combined data from the seven UEY communities, are presented in Table 4.1.[17]

[17] The odds ratios in Table 4.1 differ slightly from those in Table 3.1 because community factors are correlated with family background. For example, a family with a higher income generally lives in a relatively safer neighbourhood with a higher neighbourhood quality.

Table 4.1 – The relationship between children's outcomes and family background, family processes, and community factors.

Odds Ratios	Children's Outcomes		
	Cognitive	Behavioural	Physical Health & Well-being
Family Background			
Family Income ($10,000 units)	1.02	0.98	**1.09**
Mother's Education (years)	**1.09**	1.01	**1.08**
Father's Education (years)	**1.07**	1.02	1.03
Mother Not Working Outside the Home	**0.75**	0.96	0.76
Father Not Working Outside the Home	**0.62**	**0.63**	**0.57**
Single-Parent Family	**0.73**	**0.67**	0.68
Number of Brothers and Sisters	0.94	0.95	0.93
Family Processes			
Positive Parenting Practices	1.02	**1.95**	1.10
Engagement in Learning Activities	1.00	0.98	1.03
Family Functioning	0.99	1.04	0.95
Maternal Mental Health	1.05	**1.21**	1.08
Community Factors			
Social Support	**1.14**	**0.93**	0.95
Neighbourhood Quality	1.00	1.01	1.04
Safe Neighbourhood	1.05	**1.06**	1.02
Social Capital	1.00	**1.10**	1.06
Use of Resources	**1.18**	0.98	1.05
Residential Stability	1.02	1.02	**0.92**

Note: Figures in blue text are statistically significant at p<.10. Results are based on the relationship of NLSCY family background variables with three developmental outcomes for the 7 UEY 2001/02 communities.

Of the ten family and community factors, two have statistically significant relationships with the cognitive domain: social support and use of community resources. The results for social support suggest that a child in a family with a rating of 6.0 on the 10-point scale would be 14% less likely to be at risk in the cognitive domain than a child living in a family with a rating of 5.0 (or a family rated 5.0 instead of 4.0, etc.).

An increase of one point in "use of community resources" was associated with an 18% increase in cognitive scores. In other words, families that make use of various recreation, educational, and leisure facilities, such as pools, play-spaces, libraries, drop-in programs, art museums, and movies, have children with better cognitive scores.

For the behavioural domain, positive parenting was by far the most important factor. A one point increase on the positive parenting scale was associated with a 95% increased likelihood in good behavioural outcomes. This means that parents who monitor children's behaviour, are responsive to their needs, and encourage independence, are much more likely (almost twice as likely) to have children without behaviour problems.

Three other factors had statistically significant and positive effects: the mental health of the mother, living in a safe neighbourhood, and social capital. An increase of one point on the ten-point scale for maternal mental health was associated with 21% increased likelihood in a child being not at risk due to problems in the behavioural domain. Living in a safe neighbourhood and in a neighbourhood with a high level of social capital were associated with increases in the odds of 6% and 10% respectively of a positive outcome in the behavioural domain.

Social support had effects contrary to expectations. This may have arisen because parents whose children have behavioural problems may be more aware of the social support available to them, and therefore reported higher levels of support.

Finally, for physical health and well-being, none of the family or community factors were statistically significant protective factors. Residential stability had effects that were contrary to expectations, suggesting that children living in neighbourhoods with a higher percentage of transient families were less likely to have health problems. One should note that the model controls for whether the child was living in a single-parent family, which may have captured some of the negative effect normally associated with transient families.

C. Community indicator scores for Saskatoon

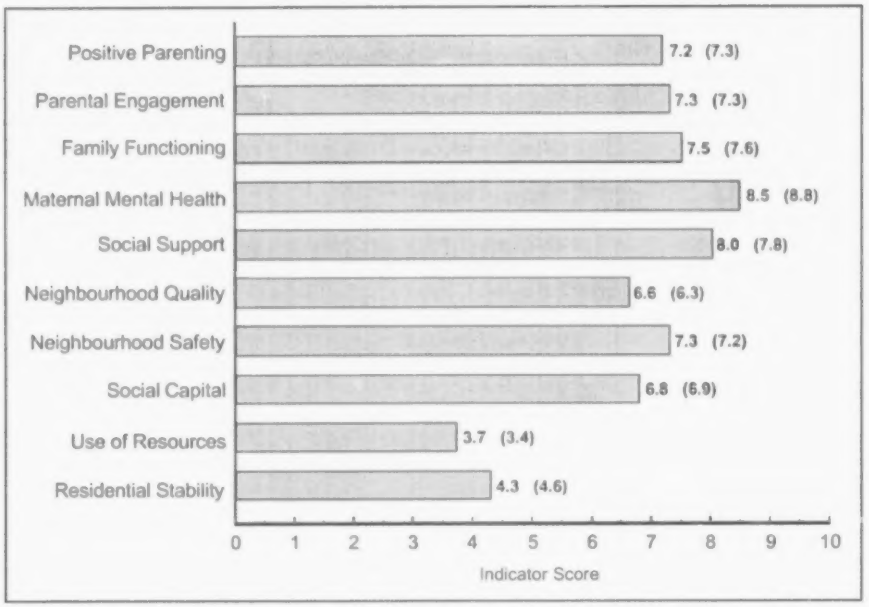
Figure 4.1 displays Saskatoon scores for each of the ten indicators described in this section. The figures in parentheses indicate the average scores for the seven 2001-02 UEY communities.

Saskatoon has a mixed profile on these indicators, scoring significantly better than the UEY average on three measures, and worse than average on three measures. On four measures Saskatoon's scores did not differ significantly from the UEY 7 norm.

Parents tended to give their neighbourhoods relatively high ratings. Saskatoon's scores were above UEY norms for social support (+0.2), neighbourhood quality (+0.3), and use of resources (+0.3). Also, scores were comparable to the norms for the seven UEY 2001-02 communities for social capital and neighbourhood safety. This is impressive, given that Saskatoon has a number of very low socio-economic status neighbourhoods, and its level of residential stability is relatively low (-0.3). The analyses above indicate that social support and use of resources are important protective factors for cognitive development. This is consistent with Saskatoon's strong performance on many of the measures of cognitive development. The two family process scores of greatest concern pertain to positive parenting and maternal mental health. These indicators help to explain why the children of Saskatoon scored relatively low on some of the behavioural outcomes measured (see Figure 2.9). Parenting skills and the mental health of the mother are of critical importance during the early years. The analyses in this section indicate that they are especially relevant to behavioural outcomes during the early years, and other studies indicate that they are important predictors of schooling outcomes during the elementary and secondary school years.[18]

[18] For reviews of recent literature and results pertaining to the first cycle of the NLSCY see Willms, J. D. (2002). *Vulnerable Children: Findings from Canada's Longitudinal Study of Children and Youth.* University of Alberta Press: Chapter 8 (The effects of parenting practices on children's outcomes by Ruth Chao and J. Douglas Willms), Chapter 9 (Parenting and children's behaviour problems by Fiona Miller, Jenny Jenkins and Dan Keating), and Chapter 10 (Maternal depression and childhood vulnerability by Marie-Andrée Somers and J. Douglas Willms).

Figure 4.1 – Community indicator scores for Saskatoon.



Source: Mean scores in red text differ significantly ($p<0.05$) from the average score across the seven UEY sites (in parentheses).

As described, there are ten indicators of family and community success. Each indicator scale has a range from 0 to 10, with 10 being a positive score. A total score out of 100 can be calculated for each community. The total score out of 100 for Saskatoon is 67.3, which is 0.1 points above the average of 67.2 for the seven 2001-02 UEY communities.

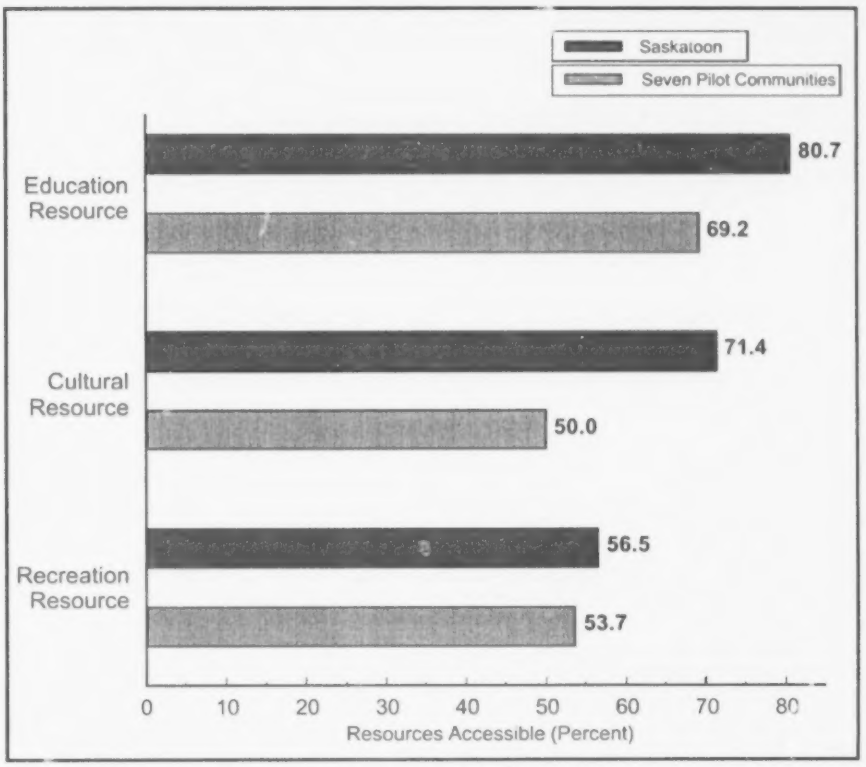
Because of the relatively low average scores in all seven UEY communities on the use of resources, this variable was further explored in each community to determine whether the problem stems mainly from a lack of availability of the resources. For each of the three types of resources, parents were asked, "Are most of these resources located within walking distance or within a short drive or bus ride?" The results for Saskatoon, presented in Figure 4.2, indicate that the children of this community have much higher than average access to all three types of resources, in particular their educational and cultural resources.

The NLSCY data also covered daycare. Early childhood programs, such as those offered at daycare, can increase a child's potential to learn, thereby enhancing his or her lifelong academic and personal development.

But for these programs to be effective, they need to be developmentally appropriate and responsive to the experiences, backgrounds and needs of the children.[19] Research suggests that, regardless of a child's socioeconomic status, four types of resources contribute to optimal child development: childcare centres, pre-schools, nursery schools, and kindergartens.

19 Doherty, G. (1997). (Zero to six: the base for school readiness.) Hull, Quebec: Human Resources Development Canada, Strategic Policy, Applied Research Branch Research paper R-97-8E.

Figure 4.2 – Accessibility of resources for Saskatoon and the seven UEY communities.



Source: NLSCY for Saskatoon (SDI) and national NLSCY data (cycle 3).

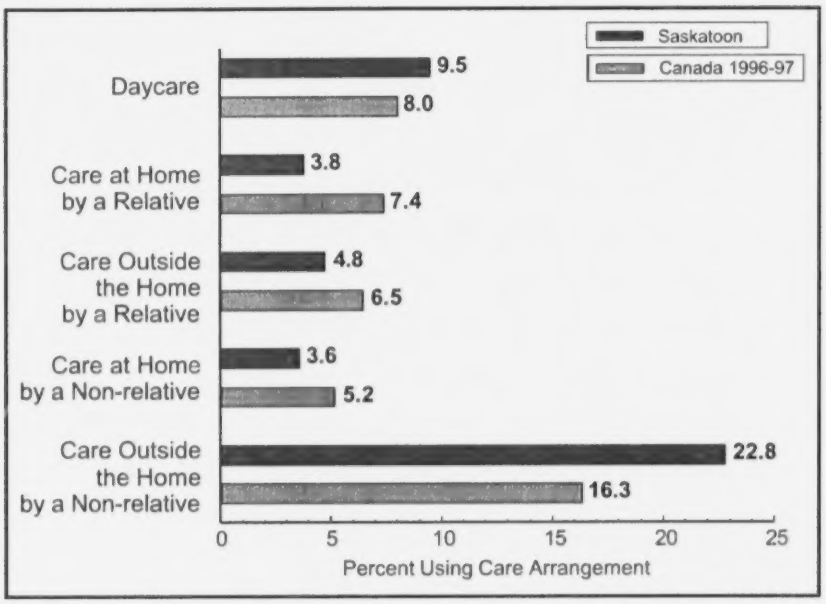
Moreover, research based on the first cycle of the NLSCY suggests that receiving daycare, either licensed or unlicensed, has positive effects on the language skills of children from low-income families. However, children from relatively affluent families tend to fare equally well across various types of care arrangements.[20]

In 1996-97, according to NLSCY, nearly one half (43.4%) of the population of 5- and 6-year-old children in Canada received care for at least part of the day by someone other than their parents. In Saskatoon, 44.5% of the children received care by someone other than their parents, which is just above the Canadian average of 43.4%.

Figure 4.3 displays the percentage of children in differing types of care arrangements for the Saskatoon community, compared with the figures for Canada for 1996-97, derived from NLSCY.

20 Kohen, D., Hertzman, C., & Willms, J. D. (2002). The importance of quality child care. In J. D. Willms (Ed.), Vulnerable Children: Findings from Canada's National Longitudinal Study of Children and Youth. University of Alberta Press.

Figure 4.3 – Types of care arrangements.



Source: NLSCY for Saskatoon (SDI) and national NLSCY data (cycle 3).

The children in this community were slightly more likely to receive daycare, compared with children living elsewhere in Canada, and slightly less likely to receive care by a relative, either inside or outside the home. About 23% of the children in Saskatoon were cared for outside the home by a non-relative, the most popular type of care arrangement in Canada (16%).

To summarise, Saskatoon has a number of strengths. It has high quality neighbourhoods, and parents report high levels of social support. It has a relatively high level of children's resources, and families tend to make better use of them than in the other seven UEY 2001-02 communities. Saskatoon scored somewhat lower on measures of positive parenting and maternal depression, indicating a need for resources that would help some parents cope with depression and help improve the parenting skills of all parents.

V. Looking forward

Overall, the children of Saskatoon showed strong signs of positive developmentand preparedness for learning at school. The community is composed of high quality and safe neighbourhoods, even though there are a number of neighbourhoods that are transient and of very low socioeconomic status. The community has relatively good access to resources for children, and families make use of them. These factors undoubtedly contribute to Saskatoon's success in preparing children for a good start in life.

Although many Canadian communities share at least some of these broader characteristics, each community also exhibits a variety of unique features that sets it apart from others.

This is one of the reasons community-based research is so important. Research allows a community to understand how well its youngest citizens are developing and lends insight into how the obtained results came about. Investments for families and children, as well as for children's development, can be monitored over time so that effectiveness and efficiency of community effort can be improved.

Saskatoon can take pride in the success of its youngest children; however, there is room for improvement, particularly in the area of behavioural development. The prevalence of children with behavoural problems was at least one-and-a-half times national norms. These results may be attributable to three factors. Saskatoon had somewhat low scores on the indicators describing parenting skills and maternal mental health. Also, Saskatoon has a particularly high percentage of single parents. Feelings of loneliness and prolonged depression are common amongst single parents, and mothers who suffer depression may find it difficult to display warmth towards their children or be engaged with them in learning activities. These three factors – positive parenting, maternal mental health, and living in a two-parent family – are important protective factors for children's healthy development, particularly with respect to behaviour.

A. What makes Saskatoon unique?

Several features of Saskatoon stand out as unique. First, Saskatoon has a high percentage of single parent families and a number of areas of low socioeconomic status. There is a marked residential segregation, with most of the poor neighbourhoods located to the west of the South Saskatchewan River. It also has a high percentage of Aboriginal families. Second, despite having areas of low socioeconomic status, Saskatoon has strong neighbourhoods, with high levels of social support. Parents considered their neighbourhoods to be clean and safe, offering quality schools and nurseries, and a range of facilities for young children. These factors likely contribute to Saskatoon's success on the markers of cognitive development. Third, Saskatoon has a high percentage of children with behaviour problems. This is of particular concern, as behaviour problems upon entry to school tend to persist throughout the schooling years and are a risk factor for low school achievement and disaffection from school. If children with behaviour problems tend to be concentrated in certain schools in Saskatoon, because of the residential segregation evident in our analyses, then the risks associated with poor behavioural development are increased further.

B. Summary

Saskatoon is one of thirteen communities participating in the UEY initiative. Through this initiative, valuable lessons are being learned about the needs and strengths of communities with different economic, social, and physical characteristics. With respect to early childhood development, we are also learning how they are working to improve children's outcomes, as well as the relative success (or lack thereof) of their efforts.

Communities will determine how their citizens will work together to improve children's early developmental outcomes based on research evidence. Results from the UEY initiative will inform the discussion in the community for future action plans.

At the same time, it is a societal responsibility - of governments, educators, community agencies, neighbourhoods, and families - to make sure improvements take place for all children. Strategies that require the community to look at itself as a whole community, as well as neighbourhood by neighbourhood, will likely have more enduring effects. UEY is able to provide research results to support both.

For example, neighbourhood by neighbourhood, families may improve their outdoor play-spaces, and on a community level, concerned agencies and organisations could improve community-wide strategies to integrate disadvantaged groups. As communities document their efforts, as well as their results, effective practices will be identified.

Any community's response must consider its unique features. The importance of a coordinated approach involving families, teachers, and all community members must be emphasised because each has been shown to be important in enhancing a child's development. Governments, community institutions, schools, and the voluntary sector in Saskatoon must continue to work together, as each can make a valuable and important contribution. Support for families with children from the larger community network is critical.